Notice of Allowability	Application No. 10/624,229	Applicant(s) MARQUEZ-SANCHEZ ET AL.	
	Examiner Joseph W. Drodge	Art Unit 1723	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *the Amendment filed May 9, 2006*.

2. ☒ The allowed claim(s) is/are *4,8,10-18 and 20-27, now renumbered claims 1-19*.

3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☐ All b) ☐ Some* c) ☐ None of the:
      1. ☐ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
   (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date *5/15/06* .
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Richard Kaba on May 16, 2006.

The application has been amended as follows: Claim 4 has been amended as follows: --

Claim 4 (currently amended): An adsorbent filter material useful for removing a solute from a fluid, comprising:

a liquid permeable fibrous support material comprising fibers having hydroxyl groups, hydrolyzable alkoxyl groups, amino groups, or sulfhydryl groups; ***and***

an adsorbent porous inorganic gel coating on the fibrous support material, wherein the inorganic gel coating has been molecularly imprinted for the solute using template molecules present during formation of the inorganic gel coating but selectively removed thereafter from the filter material, wherein the fibrous support material comprises cellulose having a lignin content of less than 1.0 percent ***, the support material having been surface treated sufficiently so as to maintain attachment of the gel coating to the support material, without leaching off of the support material, upon contact with water at about 100 degrees C***. --.

Claim 8 has been amended as follows: --

Claim 8 (currently amended): An adsorbent filter material useful for removing a solute from a fluid, comprising:

a liquid permeable fibrous support material comprising fibers having hydroxyl groups, hydrolyzable alkoxyl groups, amino groups, or sulfhydryl groups; ***and***

an adsorbent porous inorganic gel coating on the fibrous support material, wherein the inorganic gel coating has been molecularly imprinted for the solute using template molecules present during formation of the inorganic gel coating but selectively removed thereafter from the filter material, wherein the molecular imprinting comprises alterations to the inorganic gel coating imparted by the presence of caffeine as template molecules during formation of the inorganic gel coating, and subsequent removal of the template molecules while leaving the inorganic gel coating anchored in place to the fibrous support material, ***the support material having been surface treated sufficiently so as to maintain attachment of the gel coating to the support material, without leaching off of the support material, upon contact with water at about 100 degrees C***. --.

Claim 12 has been amended as follows: --

Claim 12 (currently amended): An adsorbent filter material useful for removing a solute from a fluid, comprising:

a liquid permeable fibrous support material comprising fibers having hydroxyl groups, hydrolyzable alkoxyl groups, amino groups, or sulfhydryl groups; ***and***

an adsorbent porous inorganic gel coating on the fibrous support material, wherein the inorganic gel coating has been molecularly imprinted for the solute using template molecules present during formation of the inorganic gel coating but selectively removed thereafter from the filter material, wherein the inorganic gel coating comprises a gel structure comprising a metal or metalloid comprising metal selected from the group consisting of silicon, aluminum, titanium, zirconium, and vandium, ***the support material having been surface treated sufficiently so as to maintain attachment of the gel coating to the support material, without leaching off of the support material, upon contact with water at about 100 degrees C*** . --.

Claim 20 has been amended as follows: --

Claim 20 (currently amended): A method for filtering *[*a solute from a fluid*]* ***an edible liquid or beverage so as to remove suspended particulate matter while removing a harmful or undesirable solute from the edible liquid or beverage***, comprising:

providing an adsorbent filter material, wherein the filter material comprises a liquid permeable fibrous support material comprising fibers having hydroxyl groups or hydrolyzable alkoxyl groups, and an adsorbent porous inorganic gel coating on the fibrous support material, wherein the inorganic gel coating has been molecularly imprinted for the solute using template molecules present during formation of the inorganic gel coating but selectively removed thereafter from the filter material; and

passing *[*a fluid*]* ***an edible liquid or beverage*** containing a ***harmful or undesirable*** solute through the adsorbent filter *[*effective*]* to ***remove the suspended particulate matter by the support material while selectively*** retain***ing*** *[*at least a

portion of*]* the solute in the *[*filter material] ***gel coating to yield a purified edible liquid or beverage product***, wherein the inorganic gel coating comprises silica, and the fibrous support material comprises cellulose. --.

Claim 21 has been amended as follows: --

Claim 21 (currently amended): A method for filtering *[*a solute from a fluid*]* ***an edible liquid or beverage so as to remove suspended particulate matter while removing a harmful or undesirable solute from the edible liquid or beverage***, comprising:

providing an adsorbent filter material, wherein the filter material comprises a liquid permeable fibrous support material comprising fibers having hydroxyl groups or hydrolyzable alkoxyl groups, and an adsorbent porous inorganic gel coating on the fibrous support material, wherein the inorganic gel coating has been molecularly imprinted for the solute using template molecules present during formation of the inorganic gel coating but selectively removed thereafter from the filter material; and

passing *[*a fluid*]* ***an edible liquid or beverage*** containing a ***harmful or undesirable*** solute through the adsorbent filter *[*effective*]* to ***remove the suspended particulate matter by the support material while selectively*** retain***ing*** *[*at least a portion of*]* the solute in the *[*filter material] ***gel coating to yield a purified edible liquid or beverage product***, wherein the fluid comprises a caffeinated fluid and the solute comprises caffeine. --.

Claim 22 has been amended as follows: --

Claim 22 (currently amended): The method according to claim 21, wherein *[*the solute comprises caffeine, and*]* the *[*fluid*]* ***liquid or beverage product*** comprises a caffeinated fluid selected from coffee, tea, cola or carbonated soda drink.

Claim 23 has been amended as follows: --

Claim 23 (currently amended): A method for filtering *[*a solute from a fluid*]* ***an edible liquid or beverage so as to remove suspended particulate matter while removing a harmful or undesirable solute from the edible liquid or beverage***, comprising:

providing an adsorbent filter material, wherein the filter material comprises a liquid permeable fibrous support material comprising fibers having hydroxyl groups or hydrolyzable alkoxyl groups, and an adsorbent porous inorganic gel coating on the fibrous support material, wherein the inorganic gel coating has been molecularly imprinted for the solute using template molecules present during formation of the inorganic gel coating but selectively removed thereafter from the filter material; and

passing *[*a fluid*]* ***an edible liquid or beverage*** containing a ***harmful or undesirable*** solute through the adsorbent filter *[*effective*]* to ***remove the suspended particulate matter by the support material while selectively*** retain***ing*** *[*at least a portion of*]* the solute in the *[*filter material] ***gel coating to yield a purified edible liquid or beverage product***, wherein the fluid comprises a lipid-containing material in a flowable state and the solute comprises cholesterol. --.

Claim 24 has been amended as follows: --

Claim 24 (currently amended): The method according to claim 23, wherein *[*the solute comprises cholesterol, and*]* the *[*fluid*]* ***liquid or beverage product*** comprises a lipid-containing material selected from egg yolk, butter fat, beef tallow, and fish oil.

Claim 25 has been amended as follows: --

Claim 25 (currently amended): A method for filtering *[*a solute from a fluid*]* ***an edible liquid or beverage so as to remove suspended particulate matter while removing a harmful or undesirable solute from the edible liquid or beverage***, comprising:

providing an adsorbent filter material, wherein the filter material comprises a liquid permeable fibrous support material comprising fibers having hydroxyl groups or hydrolyzable alkoxyl groups, and an adsorbent porous inorganic gel coating on the fibrous support material, wherein the inorganic gel coating has been molecularly imprinted for the solute using template molecules present during formation of the inorganic gel coating but selectively removed thereafter from the filter material; and

passing *[*a fluid*]* ***an edible liquid or beverage*** containing a ***harmful or undesirable*** solute through the adsorbent filter *[*effective*]* to ***remove the suspended particulate matter by the support material while selectively*** retain***ing*** *[*at least a portion of*]* the solute in the *[*filter material] ***gel coating to yield a purified edible liquid or beverage product***, wherein the *[*fluid*]* ***edible liquid or beverage*** comprises water and the solute comprises an organic compound selected from a pesticide and a herbicide. --.

Claim 26 has been amended as follows: --

Claim 26 (currently amended): A method for filtering *[*a solute from a fluid*]* ***an edible liquid or beverage so as to remove suspended particulate matter while removing a harmful or undesirable solute from the edible liquid or beverage***, comprising:

providing an adsorbent filter material, wherein the filter material comprises a liquid permeable fibrous support material comprising fibers having hydroxyl groups or hydrolyzable alkoxyl groups, and an adsorbent porous inorganic gel coating on the fibrous support material, wherein the inorganic gel coating has been molecularly imprinted for the solute using template molecules present during formation of the inorganic gel coating but selectively removed thereafter from the filter material; and

passing *[*a fluid*]* ***an edible liquid or beverage*** containing a ***harmful or undesirable*** solute through the adsorbent filter *[*effective*]* to ***remove the suspended particulate matter by the support material while selectively*** retain***ing*** *[*at least a portion of*]* the solute in the *[*filter material] ***gel coating to yield a purified edible liquid or beverage product***, wherein the *[*fluid*]* ***edible liquid or beverage*** comprises a natural food matrix in a flowable state and the solute comprises a sugar. --.

Claim 27 has been amended as follows: --

Claim 27 (currently amended): A method for filtering *[*a solute from a fluid*]* ***an edible liquid or beverage so as to remove suspended particulate matter while removing a harmful or undesirable solute from the edible liquid or beverage***, comprising:

providing an adsorbent filter material, wherein the filter material comprises a liquid permeable fibrous support material comprising fibers having hydroxyl groups or hydrolyzable alkoxyl groups, and an adsorbent porous inorganic gel coating on the fibrous support material, wherein the inorganic gel coating has been molecularly imprinted for the solute using template molecules present during formation of the inorganic gel coating but selectively removed thereafter from the filter material; and

passing *[*a fluid*]* ***an edible liquid or beverage*** containing a ***harmful or undesirable*** solute through the adsorbent filter *[*effective*]* to ***remove the suspended particulate matter by the support material while selectively*** retain***ing*** *[*at least a portion of*]* the solute in the *[*filter material] ***gel coating to yield a purified edible liquid or beverage product***, wherein the *[*fluid*]* ***edible liquid or beverage*** comprises a food lipid or an oxidized food lipid in a flowable state, and the solute is selected from an aldehyde and a ketone. --.

The following is an examiner's statement of reasons for allowance: Independent apparatus claims 4, 8 and 12, following this Examiner's Amendment now distinguish over all of the prior art of record and over newly cited Farwell et al, Sasaki et al, Catania et al and Bauer et al in view of respective added recitations of the fibrous support material having been surface treated sufficiently to maintain attachment of the gel coating to the support material , without leaching off of the support material upon contact with water at about 100 degrees C. Support for such added limitation is found at page 14, lines 8-19 of the Instant Specification concerning surface treatment of cellulose fibers and maintained attachment to the silica and significance of such treatment in allowing use of the device with hot beverages, in combination with page 10, lines 9-16 concerning cellulose fibers and silica being described as the support material and gel coating. Although the prior art of record as well as newly cited Farwell et al in combination with Sasaki et al collectively teach the recited fibrous support material and molecularly imprinted inorganic gel coating thereon, none of the prior art suggest surface modification of such support material to facilitate apparatus use in environments concerning high temperature aqueous fluids.

Independent claims 8 and 13 respectively are now similarly deemed to distinguish concerning the prior art of record and newly recited prior art concerning contacting of the fibrous material with a base-containing fluid to provide surface-treated fibers.

Independent method of use claims 20,21,23 and 25-27 now distinguish, in particular over the newly cited prior art to Farwell and Sasaki, Catania et al, and Bauer

et al, concerning molecularly-imprinted inorganic gel coatings in combination with adsorbent fibrous support matrix, and their use in selectively removing a harmful or undesirable solute from an edible liquid or beverage to yield a purified edible liquid or beverage product, specifically by removing suspended particulate matter by the fibrous support material while selectively retaining an undesirable solute by the molecularly imprinted gel coating. Support for added limitations and clarifications in this Examiners Amendment concerning the method for filtering claims is found in the Instant Specification at page 10, line 17-page 11, line 12. Farwell and Sasaki cumulatively teach the claimed material, however are largely directed to use of the material in sensing or detection of presence of chemical and biological weapons substances in air or water. Catania et al teach a molecularly imprinted polymeric gel coating in combination with a fibrous support matrix for analysis of caffeine content of a beverage, however does not utilize the material to purify a food product or beverage. Bauer et al teach an adsorbent inorganic gel in combination with a fibrous support matrix to purify samples and analyze the samples for content of any of diverse substances including caffeine, cholesterol, presence of pesticide, etc. in fluids, however does not suggest using such material to remove solute(s) to any extent to purify an edible liquid or beverage. In Bauer, filtering of the sample to remove undesirable substances, is taught as provided by one or more separate filter elements in or upstream of the sample application zone (paragraphs 104,122).

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Drodge at telephone number 571-272-1140. The examiner can normally be reached on Monday-Friday from 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda Walker, can reached at 571-272-1151. The fax phone number for the examining group where this application is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either private PAIR or Public PAIR, and through Private PAIR only for unpublished applications. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have any questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JWD

May 15, 2006

JOSEPH DRODGE
PRIMARY EXAMINER